Bangalore Electricity Supply Company Limited

(Wholly owned by Government of Karnataka Undertaking)

TECHNICAL SPECIFICATION FOR LT PROTECTION KIT FOR DISTRIBUTION TRANSFORMERS UP TO AND INCLUSIVE OF 100 KVA.

1.0 **SCOPE:**

This Specification covers design, manufacture and supply of LT protection kit for distribution Transformers. The LT protection kit offered shall be suitable for outdoor installation and mounting on RCC Poles. They shall serve for protection on LV side of distribution transformers ranging from capacity 25 KVA upto and inclusive of 100 KVA, distribution transformers.

2.0 **CLIMATIC CONDITIONS:**

The LT Protection kit along with its mounting shall suit outdoor installations.

3.0 **STANDARDS:**

The L.T Protection kit along with its components/Mounting arrangement shall conform to the latest edition of relevant standards.

4.0 **(A) COMPLETENESS OF SUPPLY:**

The component offered shall be complete and operative on all aspects and shall conform to high standard of Engineering design and workmanship.

(B) Deviation from technical specifications: Tenderer shall furnish the details of deviations/modification proposed by him if any towards improvement of the said offer.

5.0 **TECHNICAL PARTICULARS:**

The brief Technical particulars of various components to be offered are as hereunder.

5.1 A typical sketch detailing the L.T protection kit to be supplied is annexed. It is mentioned that the dimensions regarding mounting and conductor sizes are binding. **[Drg No. BESCOM/GM/QS/10 Rev-002 Dated:24-11-20218]**

5.2 **1.1 KV PIN INSULATORS:**

a) The insulators shall conform to IS-1445/1977 with latest amendments if any and baked in temperature controlled kiln only. They should be brown glazed.

The pin Insulator shall be in conformity with Fig.1 of IS-1445/1977, and with threaded forged G.I Pins. The profile of threads being as given on Fig. 5 of IS-1445/1977.

b) The Insulators shall have the following electrical and mechanical characteristics.

1	Dry power frequency with stand voltage	:	23 KV (RMS)
2	Wet power frequency with stand voltage	:	10 KV (RMS)

3	Power frequency puncture With stand voltage	:	1.3 x the actual dry flash over voltage
4	Minimum failing load	:	366.902 Kgf. (3.5 KN)

c) **One sample 1.1 KV insulators used in LT Protection kit shall be submitted as per QR and sample will be verified by BESCOM officials. The make of the insulators shall be mentioned in the Guaranteed Technical Particulars.**

d) The type tests, acceptance tests and routine tests for 1.1 kV Pin Insulators shall be as per IS: 1445/1977. **The type test certificates in respect of the insulators used shall be enclosed to the tender as per QR.**

e) Mounting frame assembled with insulators, terminal connectors shall be packed in suitable crates, loose items such as Fish Plates, Bolts and nuts etc., to be packed in suitable polythene bags.

5.3 **TERMINAL CONNECTOR (For receiving LT leads from Transformer and tap off to line):**

a) The fasteners used shall be galvanized.
b) The materials used shall be Aluminium alloy.
c) All Ferrous components shall be galvanized.
d) 6 numbers of pad connector shall be provided as shown in the drawing.
e) 6 numbers of Aluminium plates of size 120x60x10mm shall be provided as shown in the drawing fixed to (d) above with 4nos of GI bolts & nuts to each plate.
f) 12 Nos of 95 sq mm heavy duty long barrel Aluminium lugs shall be supplied and fixed to the Aluminium plate with 16mm dia 40mm GI bolts & nuts with spring & flat washers.

5.4 **BILL OF MATERIALS:**

The bill of materials is as indicated in the drawing.

5.5 **G.I.PINS:**

The 1.1 KV G.I pins used shall conform to IS-2633/1972 and IS-6745/1972. The dimensions shall conform to Fig-2 of IS-7935/1975 with shank length of 40 mm as indicated in the drawing.

6.0 **PACKING:**

Each LT protection kit i.e mounting frame assembled with insulators, terminal connectors shall (with fittings) shall be packed in wooden crates suitable for easy and rough handling and acceptable for transport. Wooden separators shall be fixed between each kit to keep individual insulators in position without movement within the crate. The package containing the insulators shall have a mark BESCOM and P.O No. & Date.

7.0 **Name Plate**: The each LT Protection kit Unit shall be provided with a Name plate of minimum size 100X40mm shall be fixed with the following details which are legibly and indelibly marked.

1) Name of the material
2) Name of Manufacturer
3) BESCOM
4) Purchase Order No. and Date
5) Sl.No.

8.0 INSPECTION:

8.01 All tests and inspection shall be generally made at the place of manufacturer. Purchaser (BESCOM) shall be provided with all reasonable

facilities, without charge, to satisfy him that the material is being furnished in accordance with this specification. Purchaser and its representative shall at times be entitled to have access to the works and to all places of manufacture where insulators are manufactured and the supplier shall afford all facilities to them for unrestricted inspection of the works, inspection of materials and inspection of manufacturing process of insulators for conducting necessary tests and specified herein.

8.02 The supplier shall keep the Purchaser informed in advance of the time of Starting and progress of manufacture of insulators in various stages so that arrangements could be made for inspection.

8.03 No material shall be dispatched from its point of manufacture unless the material has been satisfactorily inspected and tested.

8.04 The BESCOM has the right to have the tests carried out at its own cost by an independent agency, when considered necessary.

9.0 SAMPLE

The Contractor shall submit two samples and get them approved by the competent authority before taking up the manufacture. The two approved samples will be kept as under

i) One approved sample will be with the manufacturer at the manufacturing premises so that so that the inspecting officer can inspect the materials offered for inspection with reference to the approved sample.
ii) The second approved sample will be kept at BESCOM stores, Rajajinagar, Bangalore.

10.0 GUARANTEED TECHNICAL PARTICULARS:

The Bidder shall furnish the guaranteed technical particulars of the LT Protection Kit offered by him in the enclosed proforma:

General Manager (Ele),
QS&S, BESCOM